

## International cooperation on research and health promotion in fishery

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In this issue of the journal, the first Greek study of health among fishermen is presented [1]. The study is also remarkable in another way as it is the first study of the dietary and physical activity pattern among fishermen, as far as we know. A questionnaire pilot study was carried out in a random sample of one hundred Greek fishermen. The health risks factors studied include excessive weight, cardiovascular incidents, dermatological, musculoskeletal, respiratory, hearing, stress, and anxiety problems. The occupational health risk factors include alcohol, fatty food consumption, smoking and lack of physical exercise. The health effects observed are causally related to diet, smoking, and exercise, which in turn relate to the specific working conditions and culture in small-scale fishing that need to be taken into consideration in prevention programs. The results are consistent with the causal explanations in other studies about obesity and related health, also called metabolic syndrome. Several studies have shown that fishermen have a higher mortality from cardiovascular disease, cancer, and accidents [2]. A recent Danish study shows that fishermen have approximately 1.3 times higher risk of hospitalisation due to cardiovascular diseases than other occupational groups [3].

In a small pilot study from 1993, a significantly higher body mass index (BMI) was demonstrated among fishermen compared to men in all occupational groups in the labour market [4]. Trends in BMI over the past two decades, for men in all occupational groups, have been followed up with several cross-sectional studies from the National Institute of Occupational Health and the National Institute of Public Health. These show a continued increase in overweight and obesity in recent decades [5]. Among

Danish fishermen, a pilot follow-up study in 2005, using data from the statutory health surveys, showed that the proportion of fishermen with BMI > 30 had increased to 32%, from 15% in 1993 [6]. Comparing data for men in all occupational groups, the proportion of fishermen with BMI > 30 is still around twice as big as the BMI in any other group. In addition, a preliminary analysis of a small subset of data from the Danish Maritime Authority in 2009 indicates an increase in BMI among the youngest fishermen from 2005 to 2009. The few studies that exist about fishermen's health all agree on the need to implement such measures to improve the living and working conditions. While BMI is considered an indicator of some risk factors that are currently present in cardiovascular diseases, and diabetes, mortality, and early retirement are effects of various risk factors that may have been present throughout life. A recent analysis of mortality and early retirement among Danish workers showed that fishermen have a leading position compared to all other occupational groups. Data on BMI and mortality showed that fishermen are in a special medical exposed occupational group. Concerning the organisation of prevention, it is important to take into account that obesity and chronic diseases are related to social class [7, 8]. The social group that includes a large proportion of fishermen does not seem to benefit from the usual advice about diet and exercise covered by preventive interventions [9]. According to this area, in 1984 an exemplary Norwegian initiative was taken with the "Fiskernes Helsebok" ("Fishermen's health book") [10]. The pamphlet "Skikkelig mat til sjøs" outlines the relationship between regular good food on board, the risk of chronic diseases, and accident risk in a very good way.

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Danish Fishermen's Occupational Health has an ongoing project on health promotion, and fishing educational programs have specific training modules on health. The research efforts, in particular intervention research in this area, have been limited. The few studies of health conditions in fishery show some important trends, but there is a lack of in-depth studies using comprehensive data materials. Such studies will provide the necessary basis to monitor the impact of future interventions, and will also provide a good basis for comparison between countries.

International cooperation in research and development regarding health conditions in fishery is desirable, especially as fishery is a relatively small commercial area in each country. Health research will be strengthened in such cooperation for better prevention. A good start could be to bring together the initiatives that are currently taking place in some countries, for mutual inspiration between countries.

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